Application Serial No: 09/780,367
In reply to Office Action of 18 October 2004

Attorney Docket No. 79476

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (currently amended): A method for testing ~~with~~ the function of a torpedo ~~and~~ with a countermeasure threat emulation system, comprising:

selectively programming said countermeasure threat emulation system for ~~producing~~ emulating at least one of a plurality of ~~foreign~~ countermeasures using a database of ~~foreign~~ countermeasures; ~~and~~

launching said torpedo for interactive operation with said countermeasure threat emulation system; and

determining the function of said torpedo.

2. (original): The method of claim 1 further comprising analyzing sounds produced by said torpedo with a neural network within said countermeasure threat emulation system.

3. (original): The method of claim 2 further comprising providing an identification of said torpedo using said neural network.

4. (original): The method of claim 3 further comprising responding to said torpedo based on said identification.

5. (currently amended): The method of claim 4 wherein said responding further comprises choosing and ~~producing~~ emulating one of said plurality of ~~foreign~~ countermeasures corresponding to said identification.

6. (original): The method of claim 1 further comprising operating said countermeasure threat emulation system in duplex mode by simultaneously sending and receiving acoustic signals.

7. (currently amended): The method of claim 1 further comprising using a digital signal processing unit within said countermeasure threat emulation system for ~~selectively~~ producing a selected one of a wideband acoustic signal ~~or~~and a band limited acoustic signal.

8. (currently amended): A programmable countermeasure threat emulation system, comprising:

a tubular housing suitable for launching from a submarine;

a power supply within said tubular housing, said power supply including controls for ~~selectively~~ selecting between operating remotely ~~or~~and operating connected to an external power source;

a hovering system for said tubular housing for controlling mobility of said tubular housing within water;

a transmitter for transmitting acoustic signals;

a digital signal processing unit for producing waveforms to be transmitted by said transmitter; and

a central processing unit for storing digital information related one or more countermeasure threats and supplying said digital information to said digital signal processing unit.

9. (original): The system of claim 8 further comprising a receiver hydrophone.

10. (original): The system of claim 9 further comprising a neural network analyzing signals from said receiver hydrophone.

11. (original): The system of claim 8 further comprising a plurality of field programmable gate arrays for said digital signal processing unit.

12. (original): The system of claim 8 further comprising a plurality of digital signal processing integrated circuits for said digital signal processing unit.

13. (original): The system of claim 12 further comprising a signal conditioner operable for converting a stream of digital signals into analog signal for broadcast by said transmitter.

14. (currently amended): The system of claim 8 further comprising a database stored in a computer external to said housing, said database containing a plurality of ~~foreign~~ countermeasure threats.

15. (currently amended): A method for emulating a countermeasure threat, said method comprising:

maintaining a database having a plurality of ~~foreign~~ countermeasure threats;

downloading data for at least one of said plurality of ~~foreign~~ countermeasure threats into a computer within a housing;

launching said housing for underwater operation; and

transmitting an emulation of at least one of said plurality of ~~foreign~~ countermeasure threats into water through an acoustic transducer.

16. (original): The method of claim 15 further comprising processing said data utilizing one or more digital signal processing integrated circuits.

17. (original): The method of claim 16 further comprising providing a plurality of field programmable gate arrays for reprogramming said digital signal processing circuits.

18. (original): The method of claim 15 further comprising utilizing a receiver hydrophone in said countermeasure threat

emulator for receiving acoustic signals produced by an incoming torpedo.

19. (original): The method of claim 18 further comprising identifying said incoming torpedo from said received acoustic signals.

20. (original): The method of claim 19 further comprising utilizing a neural network within said countermeasure threat emulator for said identifying.

21. (original): The method of claim 19 further comprising responding to said incoming threat based on said identification and a preprogrammed response for said identification.

22. (original): The method of claim 21 further comprising simultaneously broadcasting acoustic signals and receiving acoustic signals.